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Legislative Audit Division

State of Montana

Report to the Legislature

October 2001

Information System Audit

Montana Lottery Security

Department of Commerce, through June 30, 2001
Department of Administration, effective July 1, 2001

This report contains information regarding the security controls over Montana Lottery operations. The report concludes controls are in place, which ensure the overall security of Montana Lottery operations.

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Members of the IS audit staff hold degrees in disciplines appropriate to the audit process. Areas of expertise include business, accounting and computer science.

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October 2001

The Legislative Audit Committee
Of the Montana State Legislature:

This is the report of our security audit over the operation of the Montana Lottery. The report concludes controls are in place to ensure the security of the Montana Lottery operations and includes four recommendations for improving compliance with internal policies and procedures. The Lottery response to the audit report is contained at the end of the report.

We wish to express our appreciation to the staff of the Lottery for their cooperation and assistance.

Respectfully submitted,

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Legislative Auditor

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Legislative Audit Division

Information System Audit

Montana Lottery Security

Members of the audit staff involved in this audit were Debra Blossom and Jessica Solem.

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	L. John Onstad, Director of Security	
	Paul Gilbert, Information Systems Manager	

Chapter I - Introduction

Introduction

State law requires the Legislative Audit Division to conduct a comprehensive audit of all aspects of security in the operation of the Montana Lottery (Lottery) every two years. This is the sixth audit completed since the Lottery's inception in 1987.

Audit Objectives

As required by state law, we evaluated the security controls over the Montana Lottery operations. Our primary objective was to evaluate whether security controls exist over the areas specifically enumerated in section 23-7-411, MCA.

a) personnel security;
b) lottery sales agent security;
c) lottery contractor security;
d) security of manufacturing operations of lottery contractors;
e) security against ticket or chance counterfeiting and alteration and other means of fraudulently winning;
f) security of drawings among entries or finalists;
g) computer security;
h) data communications security;
i) database security;
j) systems security;
k) lottery premises and warehouse security;
l) security in distribution;
m) security involving validation and payment procedures;
n) security involving unclaimed prized;
o) security aspects applicable to each particular lottery game;
p) security of drawings in games whenever winners are determined by drawings;
q) the completeness of security against locating winners in lottery games with preprinted winners by persons involved in their production, storage, distribution, administration, or sales; and
r) any other aspects of security applicable to any particular lottery game and to the lottery and its operations.

Audit Scope and Methodology

The audit was conducted in accordance with governmental auditing standards published by the United States General Accounting Office. A number of procedures were performed to evaluate all aspects of security over Lottery operations as required by state law, including review of security policies and procedures, interviewing Lottery management and staff, and reviewing documentation. We evaluated compliance with internal security policies and procedures, Multi-State Lottery Association (MUSL) Minimum Game Security

Standards, Montana Cash drawing procedures, and electronic access controls. We determined the implementation status of the prior audit recommendations regarding: contractor access to Game Management System (GMS); security involving validation and payment procedures; computer and network security; GMS User Access; and GMS Password Security.

Employee files were reviewed to ensure compliance with the internal hiring procedures, confirming whether file documentation is complete. One of the Lottery's primary contractors is Scientific Games Incorporated (SGI). SGI provides support for marketing, on-line and instant games, retailer network communications, and system support. SGI also houses the equipment that powers the Lottery operations. We evaluated physical security over the Lottery premises, warehouse and SGI facilities; and identified access controls in place to ensure contractor changes to the system are appropriate and authorized. We verified security controls over the procedures for communicating winning numbers from Lottery headquarters to SGI. Lottery personnel use the Game Management System to access information maintained at SGI. Lottery procedures for establishing and authorizing access to GMS were examined to determine change access to critical GMS processes is controlled.

Both on-line and instant tickets must be initiated through a licensed terminal in order for a winning ticket to be valid for payout. We evaluated ticket validation procedures and verified the procedures ensure tickets are authentic. We observed ticket redemption and payouts, and verified compliance with validation and payment procedures. We identified controls to ensure unclaimed prizes are transferred to the general fund.

Conclusion

The Lottery is in substantial compliance with state law and industry standards, and security controls are in place to ensure security of Lottery operations. The following chapters discuss areas that would provide for more effective Lottery security operations. The areas include:

(1) Compliance with internal procedures;
(2) Security over ticket stock;
(3) Completeness of nonplayers database;
(4) Access to the internal control system; and game management system.

Lottery is in compliance with the critical aspects of the MUSL standards applicable to each particular lottery game.

Chapter II - Background

Background

The Montana State Lottery Program (Lottery) designs and markets lottery games that allow players to purchase chances to win a prize. The Lottery presently offers a variety of games, some in cooperation with other lotteries through the Multi-State Lottery Association (MUSL). Montana Cash is exclusive to Montana. A five-member State Lottery Commission, appointed by the Governor, sets policy and oversees program activities and procedures. The Lottery is funded from an enterprise fund with revenue derived primarily from participation in lottery games. Lottery revenues provide funding for 31.5 FTE. The remaining net revenue, after sales commissions and operating expenses, is deposited in the general fund on a quarterly basis. In fiscal year 2000, the Lottery transferred $5.8 million to the general fund.

Instant Games

Instant games were the first games offered by the Lottery. Players determine if they are winners by following the directions of the individual games and scratching the latex coating off the play area of a ticket. Retailers across the state sell instant tickets for $1, $2, or $3. Depending on the instant game, prizes range from free tickets to thousands of dollars. The Lottery's Game Management System (GMS) allows Lottery retailers to automatically validate instant tickets by scanning the bar code on the back of the ticket. Retailers can cash winning instant tickets up to $250, regardless of where in Montana the ticket is purchased. Prizes exceeding $250 must be claimed at the Lottery headquarters or by mailing a completed claim form and the signed ticket to Lottery. Instant ticket prizes must be claimed within six months after the announced end of the individual game.

On-Line Games

In addition to instant games, Lottery offers players four on-line games. The following three games are played with various other states in cooperation with MUSL, these drawings do not take place in Montana.

- Powerball - jackpot starts at a guaranteed $10 million with drawings every Wednesday and Saturday night.

- Wild Card - jackpot starts at $100,000 and increases when no one matches the five winning numbers and the wild card. Drawings are every Wednesday and Saturday night.

- Rolldown - prize amounts are dependent upon sales and the number of winners. If nobody wins the jackpot on the evening of the drawing, the jackpot money prize pool "rolls down" to the lower prize levels, players who matched two, three, or four winning numbers. Rolldown drawings are held every Tuesday, Thursday and Saturday night.

Montana Cash is the only on-line game specific to Montana. The Montana Cash jackpot starts at $20,000 and increases after each drawing if a player does not pick all five winning numbers. The drawings are held every Wednesday and Saturday night at the Lottery facility. Players select two sets of five numbers, either manually or "quick pick" by the system, for every $1 played. The drawing date and numbers selected are printed on the ticket. Players who match three of the selected numbers to the winning numbers win $5, if players match four numbers they win $200, if a player matches all five numbers they win the estimated jackpot. Jackpot prizes are paid in lump sum minus state and federal taxes.

On-line game prizes must be claimed within six months of the drawing of which the winning ticket was eligible. Retailers can validate and cash on-line game prizes of $599 or less. Prizes in excess of $599 must be claimed at Lottery headquarters or by mailing a completed claim form and signed ticket to Lottery.

Computer Operations

Scientific Games International (SGI), formerly known as Autotote, administers Lottery's Game Management System (GMS) for both on-line and instant games from a data processing center located in Helena. SGI's computer operations provide a centralized computer system to track transactions initiated from retailer terminals. The retailer's terminals, which are used to sell, print, and validate lottery tickets, are connected via communication lines to SGI's central data processing center.

GMS

GMS provides management information to the Lottery for both on-line and instant games. Information is transferred online from

retailer terminals in various locations across Montana to SGI's data center. GMS gives the Lottery the ability to verify whether a ticket has been claimed, to review high-tier winning tickets, and manage warehouse inventory. Additional functions of GMS include managing accounting information, validating tickets, tracking ticket claim information, obtaining sales reports, maintaining retailer information, submitting retailer orders for instant games, and tracking the status of instant ticket inventory.

Internal Control System

The Lottery operates the Internal Control System (ICS), which is primarily used for independent verification of the accuracy of ticket sales information. ICS receives live retailer transaction data. ICS data is balanced against SGI data during the on-line game drawing process to validate the numbers of tickets sold per game, the numbers selected during the drawing, and the number of winning tickets for each game.

Prior Audit Recommendations

Our previous audit report (Montana Lottery Security, 99DP-09) contained five recommendations. The Lottery implemented four and partially implemented one recommendation as discussed below.

Recommendations Implemented

We recommended the Montana Lottery establish procedures to monitor changes made by contract employees to the management system data files. The current change process ensures changes to the GMS are adequately controlled and Lottery ensures only appropriate changes are made to the system.

We recommended the Montana Lottery improve procedures to track all tickets received through the mail. Lottery improved mail validation procedures by tracking the number of tickets sent in an envelope on a claim form and ticket tracker form. All tickets received in an envelope are stapled to the claim form and there is an appropriate segregation of duties between personnel who open the mail and validate the tickets.

We recommended the Montana Lottery periodically review network access rights to ensure access is appropriate based on user job duties.

According to Lottery personnel, network access is reviewed periodically and whenever Lottery hires new personnel. We reviewed Lottery network access rights and determined access is appropriate with user job responsibilities.

We recommended Montana Lottery enable the function requiring the user to make periodic password changes, as required by state policy. Lottery has implemented our prior audit recommendation and is in compliance with the state's Usernames and Passwords Policy.

Recommendations Partially Implemented

We recommended the Montana State Lottery ensure employees are assigned user group profile access that is appropriate based on the employees' job duties. We reviewed employee user group access rights and identified four individuals assigned the super user profile. Such access grants unlimited change capability to GMS. The super user profiles increase the risk of deliberate or accidental errors to GMS data or to the instant ticket inventory. The Lottery management expresses the need for this access, restricting it to supervisor and managerial positions. In addition to the super user profiles, Lottery has implemented separate user profiles for the users to perform daily duties. GMS is only accessed through the super user profiles in specific problem solving circumstances.

The current report discusses access security over the ICS and GMS systems, beginning on page 13.

Chapter III - Security Controls

Introduction

A security control review provides information about the security environment in which Lottery operates. State law requires Lottery to maintain a high degree of security over its operation and its games. The following sections discuss areas where Lottery can improve on compliance with internal policies and procedures to ensure compliance with state law.

Compliance with Internal Procedures

To ensure personnel security, Lottery has implemented employee investigation procedures, including a security checklist, questionnaire, statement of disclosure and background authorization, fingerprint card, a Social Security number list, and driver's license and record check. During the audit, we reviewed Lottery personnel files and employment forms for eight employees hired since the prior security audit for documentation required by internal policies. In the eight files reviewed, we identified nine instances where forms or the signatures of the employee and/or supervisor were missing. Lottery personnel stated the signatures were absent because it is not essential for Lottery employees and supervisors to sign the forms.

Prior to issuing a sales agent license, statute outlines procedures Lottery must follow. Internal retailer licensing procedures, retailer investigation procedures, and ten retailer files were examined to test compliance with Lottery's internal retailer application procedures. Five of the ten files reviewed were missing signatures, had incorrect or missing control numbers, and in one instance an incomplete retailer application. Additionally, one of the files was missing the voided check or deposit slip on the electronic fund transfer form required by Lottery's internal policies. Lottery personnel stated that they overlooked the internal policies that resulted in the discrepancies in the retailer files. In one instance Lottery personnel suggested the missing retailer signature could be found in the retailer's original file. However, when we reviewed the retailer's original file we identified an incomplete application and the file was still missing the appropriate signatures.

The Lottery has established procedures and forms to assist with ensuring security over its operations. Signatures authenticate the

employee, supervisor, and/or retailer's accountability that information is adequately represented on the completed forms. The Lottery should either improve its supervisory review over form submission, or re-evaluate the necessity of information currently required on forms.

Recommendation #1
We recommend the Lottery improve its supervisory review of required information or change policy and forms to require only necessary information.

On-Line Paper Ticket Stock Security

The majority of on-line paper ticket stock for Montana Cash, Powerball, Rolldown, and Wild Card lottery games is distributed directly from the printer in New York to the retailer. However, to meet immediate retailer demands, a supply of ticket stock is stored at a warehouse in Montana City, which is owned and operated by Scientific Games International. When ticket stock is placed in or removed from the warehouse it is recorded on a ticket stock form by serial number. We observed the Montana City location and reviewed the ticket stock form for compliance with the MUSL Minimum Game Security Standards.

MUSL standards serve as a basis for establishing accountability and responsibility for an adequate level of security over ticket stock. The standards require a minimum of two people be present when adding or removing ticket stock from the warehouse. Furthermore, the standards provide that the records kept on received and issued ticket stock should include the parties present when the ticket stock was placed in or removed from the warehouse. When ticket stock is removed from the storage facility the records should indicate who took control of the ticket stock.

The form that Lottery currently uses to record the addition or removal of ticket stock does not provide for the documentation required by MUSL regarding who took control of the ticket stock or who was present when it was issued to a retailer and removed from the warehouse. The MUSL standards require the Lottery to store

ticket stock in a secure manner. While visiting the Montana City warehouse, we found empty boxes piled up against the warehouse motion detector security system, obstructing the motion detector's view over the ticket stock. Upon bringing the pile of boxes to the warehouse manager's attention they were moved from the motion detector. The standards specifically disclose that the persons present when adding or removing ticket stock from the warehouse may not be supervised or under the control of the data processing division. The ticket stock is kept in the central warehouse. Although we determined the warehouse to be physically secure, the ticket stock is stored in a location that is accessible to personnel who are supervised and/or under the control of the data processing division. The warehouse manager stated that ticket stock is stored at the warehouse to allow staff to quickly deliver ticket stock to retailers.

Recommendation #2
We recommend the Lottery:

A. Store ticket stock in a secure manner.

B. Ensure its records document the requirements of the MUSL standards for adding or removing ticket stock.

Non-Players Database

Section 23-7-302, MCA, prohibits the sale and purchase of tickets and chances by Lottery commissioners, the Lottery director and his staff, gaming suppliers doing business with the state lottery, suppliers officers and employees, employees of a firm auditing or investigating the state lottery, governmental employees auditing or investigating the state lottery, or members of their households. As administrators of the Montana Lottery, management has implemented a database to provide reasonable and practical assurance that the Lottery would not pay-out a ticket or chance to an individual prohibited by statute from playing the lottery. All players' names attached to a winning ticket that comes to the Lottery for pay-out, are verified against the database. We reviewed the database to verify it is current, ensuring personnel doing business with the Lottery are listed on the database. We identified 19 out of 62 names

reviewed that were not listed on the database, including one person who has been working for Lottery over a year.

The procedures for updating the database require new employees to fill out a householders social security number list, which lists the name and social security number of the employee as well as any members of their household. Lottery personnel periodically solicit updates from entities regarding employee turnover. According to Lottery personnel, a software enhancement allowing easier extraction of the database information has been requested. This enhancement will facilitate in the Lottery's solicitation of employee updates.

According to Lottery personnel, the inaccuracies on the database are due to a nine-month period when the Lottery's Security Investigator position, which is responsible for maintaining the database, was vacant. During that time the Lottery fell behind with its database maintenance.

To help ensure compliance with state law, the non-players database needs to be current, including all individuals prohibited from playing the lottery. The Lottery should improve procedures for maintaining the database, including establishing back-up responsibilities.

Recommendation #3

We recommend the Lottery improve procedures for maintaining the non-players database, including establishing back-up responsibilities for maintenance.

Access Security Controls

According to industry standards, management should have a control process in place to regularly review and verify user access rights, based on job responsibilities. Inadequate access security controls create the potential for unauthorized or inappropriate modifications.

User groups established for Lottery personnel denote the type of functions the user can perform. Group permissions define the individual functions/screens that an employee can access.

ICS Access

Lottery's Internal Control System (ICS) records and maintains lottery drawing data. We reviewed access rights and identified five Lottery employees with greater access than needed to perform daily job duties. According to Lottery personnel, the system access was established during the system testing period. When the Lottery upgraded the ICS, a security change was implemented. Previously, a staff person's logon ID was not required to perform functions. Only through knowledge of the ICS password could specific functions be performed. Currently, predefined logon IDs can perform functions. Upon bringing the inappropriate access to Lottery's attention, they acknowledged the access granted was greater than necessary, and took action to remove the employees with inappropriate access.

GMS Access

GMS provides management information on both on-line and instant games, including the ability to verify winning tickets, review high-tier tickets, and manage warehouse inventory.

We identified critical GMS screens and reviewed the users with access to change data. We interviewed Lottery personnel to determine which employees should have change access to the critical screens we selected. We identified Lottery employees with inappropriate access to change retailer passwords. We also identified employees with inappropriate access to view and change retailer electronic fund transfer (EFT) information. Lottery should implement controls that limit user view and change access to EFT account data. When called to their attention, Lottery personnel recognized the inappropriate access to retailer passwords and EFT information. We did not identify unauthorized or inappropriate changes to Lottery data.

Inadequate security controls create the potential for unauthorized modification to data. Lottery personnel indicated that with the implementation of new software, there is a learning curve, including

learning security features. In order to ensure ICS and GMS access is appropriate, Lottery should improve procedures and restrict access to employees who need it to perform their job.

Recommendation #4

We recommend the Lottery improve procedures to ensure user access rights are based on job responsibilities.

Agency Response

October 2, 2001

Ms. Tori Hunthausen
Information Systems Audit Deputy
Legislative Audit Division
State Capital Building
Helena, MT 59620-1705

OCT 2 2001

Dear Ms. Hunthausen,

Thank you for the opportunity to respond to the report on Montana Lottery Security.

The Montana Lottery agrees with the audit findings and recommendations. We will take the necessary action to comply with all recommendations. Through the audit process, we found areas where strengthening our current practice will improve the security of our operation.

The following is our response to specific recommendations of our audit team.

RECOMMENDATION #1

We recommend the Lottery improve its supervisory review of required information or change policy and forms to require only necessary information.

We concur with your recommendation and will improve the supervisory review over form submission and re-evaluate the necessity of certain information on required forms. These procedures will be in place by April 2002.

RECOMMENDATION #2

We recommend the Lottery:

A. **Store ticket stock in a secure manner.**
B. **Ensure its records document the requirements of the MUSL standards for adding or removing ticket stock.**

We concur with your recommendation and will develop procedures that correct and document the proper handling of ticket stock at the Scientific Games Warehouse facility at Montana City. These procedures will be in place by April 2002.

RECOMMENDATION #3

We recommend the Lottery improve procedures for maintaining the non-player database, including establishing back-up responsibilities for maintenance.

We concur with your recommendation and will improve procedures for maintaining the non-player database, including establishing backup responsibilities for maintenance. These procedures will be in place by April 2002.

RECOMMENDATION #4

We recommend the Lottery improve procedures to ensure user rights are based on job responsibilities.

We concur with your recommendation and will improve procedures to ensure user rights are based on job responsibilities. These improvements will be in place by April 2002.

Thank you again for the opportunity to respond. We greatly appreciate the constructive and professional manner in which this audit was conducted. If you have questions regarding any of our comments, please do not hesitate to contact me.

Respectfully submitted,

L. John Onstad
Director of Security

LJO/lw

cc: Gerald LaChere, Director